(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



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(43) International Publication Date 4 October 2007 (04.10.2007)

(10) International Publication Number WO 2007/109923 A1

(51) International Patent Classification: *H04L 29/06* (2006.01) *H04L 12/56* (2006.01)

(21) International Application Number:

PCT/CN2006/000545

- (22) International Filing Date: 29 March 2006 (29.03.2006)
- (25) Filing Language:

English

(26) Publication Language:

English

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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report

[Continued on next page]

(54) Title: OPTIMIZATION OF NETWORK PROTOCOL OPTIONS BY REINFORCEMENT LEARNING AND PROPAGATION

A learning component of a TFTP server interacts with clients and the environment by conducting different trials of various options in different states

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Learning component of the TFTP server receives performance feedback for these trials as rewards 420

The learning component of the TFTP server utilizes the past trials and resulting rewards to improve its decision-making policy for option negotiation

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The learned policies for various option implementation decisions are uploaded, along with the observed configurations of the environment, to a centralized place 440

Other TFTP servers download the resources and use the policy of the most similar environment as the initial point to start a new learning process in their environments (57) Abstract: In one embodiment, a method for optimization of network protocol options with reinforcement learning and propagation is disclosed. The method comprises: interacting, by a learning component of a server of a network, with one or more clients and an environment of the network; conducting, by the learning component, different trials of one or more options in different states for network communication via a protocol of the network; receiving, by the learning component, performance feedback for the different trials as rewards; and utilizing, by the learning component, the different trials and associated resulting rewards to improve a decision- making policy associated with the server for negotiation of the one or more options. Other embodiments are also described.

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